

Frobisher Bay, south-eastern Baffin Island, as manager for the Hudson Bay Company, informed me that he had seen fresh-water snails in that vicinity.

3. I did not find any terrestrial species at Port Burwell (Cape Chidley) just off the northeastern tip of Labrador, or any of the more northerly ports of call, viz., Fort Ross, the most northerly tip of Boothia peninsula; Craig Harbour, south-east corner of Ellesmere Island; and Arctic Bay, Pond Inlet, River Clyde, Panguirtung, all on the northern and eastern coasts of Baffin Island. The few ground samples I took from these northern localities yielded no shells. However, the short period permitted ashore, combined with snow, in some cases, prevented an exhaustive search.

#### BIBLIOGRAPHY

- Dall, W. H. 1905. Land and Fresh Water Mollusks of Alaska and Adjoining Regions, Harriman Alaska Exp.  
Latchford, F. R. 1884. Shells of Anticosti. Amer. Nat., 1051-1052.

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## FURTHER NOTES ON LAND SHELLS FROM KODIAK AND NEARBY ISLANDS

BY WALTER J. EYERDAM

On June 1st of this year, I returned from a 25,000-mile excursion to South America, collecting plants for the University of California at Berkeley. This journey covered parts of twelve Latin republics, including about 12,000 miles of travel in the Gran Chaco and Patagonia. Only twelve days after arriving at my home in Seattle, I was on my way to Alaska again, where I spent three and a half months.

While collecting plants in the Kodiak islands, I managed to make a few more locality records. At Alitak, on the S.W. coast of Kodiak, I found, in abundance under wild rhubarb, fine specimens of *Succinea chrysis* Westerlund. Under broad leaves at the base of the stalks of three plants were found about 200 specimens. *Discus cronkhitei* Newcomb and *Vitrina alaskana* Dall were also quite common.

Conditions of vegetal habitat are quite different around Alitak than around Uganik Bay, where I collected some land shells in 1924. Only the above species of land shells were found in this district.

On Raspberry Island, I also collected in September many *Succinea chrysis* in the same habitat as at Alitak. *Vitrina alaskana* was also rather common in this situation. None of the very small species of shells were found, although careful search was made for them. Raspberry Island is in Raspberry Strait, which lies between Kodiak and Afognak islands.

In 1931 I collected plants on Sitkalidak Island but found no snails the whole summer. This island is on the S.W. coast of Kodiak Island.

The principal habitat of land snails on Kodiak, and on some of the larger islands of the Aleutian chain, is at the base of the wild rhubarb, *Heracleum lanatum*. Similar conditions prevail in Kamchatka and adjacent parts of Siberia.

Many of the same species found on Kodiak Island are found on both sides of the Bering Sea. Too little is known about the distribution of the scant molluscan fauna to determine just which species migrated from Asia to America or from America to Asia. The trend of the plant migrations across the Bering Sea by the way of the Aleutian Islands is more definitely known through the exhaustive studies of plants of Kamchatka and the Flora of the Aleutian Islands by Dr. Eric Hultén of Sweden. As indicated by plant migrations there seem to be many more species that have migrated from Asia to Alaska by way of the Aleutians than have migrated from Alaska to Asia. Sufficient reason for this would be found in the influence of distribution from west to east by the Kuro Siwa or Japan current which sweeps along the south side of the Aleutians and across the Gulf of Alaska.

The following list of shells found on Kodiak and Unalaska islands and Kamchatka peninsula were collected by the author except seven species marked with a star. All species except the three Kamchatkan succineas occur on Kodiak Island or can be expected to be there.

I have collected all other species in the above list except the three Kamchatkan *Succinea*. *Cochlicopa lubrica*, *Zoogenites*

Kodiak I.	Unalaska I.	Kamchatka
<i>Prophysaon andersoni</i> J. G. Cooper	+	...
<i>Succinea chrysis</i> Westerlund	+	...
<i>Succinea grosvenori</i> Lea	+	...
...	...	* <i>Succinea putris</i> L.
...	...	* <i>Succinea pfeifferi</i> Rossm.
...	...	* <i>Succinea arenaria</i> Bouch
<i>Discus cronkhitei</i> Newcomb	+	+
<i>Vitina alaskana</i> Dall	+	+
<i>Vitrea radiatula</i> Alder	...	...
<i>Punctum conspectum</i> Bland	+	...
<i>Pristiloma arctica</i> Lehnert	+	...
* <i>Haplotrema vancouverense</i> Lea	+	...
...	...	<i>Cochlicopa lubrica</i> Müll.
...	<i>Polygyra columbiana</i> Lea	...
<i>Euconulus fulvus</i> Müll.	...	+
<i>Euconulus fulvus alaskensis</i> Pilsbry	+	+
* <i>Retinella binneyana occidentalis</i> H.B.B.	...	...
<i>Vertigo modesta</i> Say	+	+
* <i>Vertigo modesta ultima</i> Pilsbry	...	...
<i>Columella alticola</i> Ingersoll	+	...
...	+	<i>Zoogenites harpa</i> Say
...	...	<i>Retinella hammonis</i> Ström
...	* <i>Haplotrema vancouverensis</i> Lea	...

*harpa* Say and *Retinella hammonis* Ström have also a wide distribution in Canada and U. S. A., but have never been recorded from Kodiak or adjacent islands.

Nearly all of the shells reported on the Kodiak islands also occur on the Aleutian islands. *Haplotrema vancouverense* and *Polygyra columbiana* have not yet been reported from Kodiak Island, so it is strongly suspected that their occurrence in two or three spots on Unalaska Island may have been accidental. They are not uncommon in the region of Prince William Sound and in southeastern Alaska.



## AESTIVATION OF *LYMNAEA LANCEATA* (GOULD)

BY HENRY VAN DER SCHALIE

Through a grant in aid from the H. H. Rackham fund, intensive collecting of land and fresh-water mollusks in the Green Bay region of Wisconsin was made possible during the summer of 1939. In the course of this work an interesting observation was made on the aestivation of a colony of *Lymnaea lanceata*. This colony was found aestivating on tree trunks. So far as can be determined, this behavior is different from that of any other species of aquatic pulmonates living in temporary woods-pools.

It is now common knowledge that several species of aquatic pulmonates, such as *Aplexa hypnorum*, *Lymnaea palustris*, *L. caperata*, *L. stagnalis*, and *Gyraulus parvus*, among others, during periods of drought bury themselves in the mud at the bottom of the pools they normally inhabit. One naturally assumes that most aquatic pulmonates inhabiting temporary pools behave in this manner. However, *Lymnaea lanceata* may be an exception to this generalization. The suggested difference in its behavior is emphasized by the fact that Sterki<sup>1</sup> reported a somewhat similar observation for *L. lanceata*. He found this species in a marsh near Hudson, Ohio, aestivating "on stems and leaves of sedges, several inches above the ground."

The colony of *L. lanceata* in Wisconsin inhabited a swamp about six miles west of Oconto Falls. Hundreds of them were found aestivating on the trunks of the elms that formed the border around a dense growth of cedar trees. They were attached to the bark by an epiphragm. A collecting bag could be filled with specimens by merely running a hand downward along the bark, catching the specimens as they fell. Many specimens were orientated with the apex of the shell pointed upward, but this situation was by no means common to all of them. Several were seen as high as five feet above the ground. Among the leaves, soil and dried vegetation surrounding the base of the trees, the following additional species were collected (given in the order of their abundance):

<sup>1</sup> NAUTILUS, 26, 1912, pp. 64-65.